MESSAGEPHONE, INC.

July 29, 1994

VIA FEDERAL EXPRESS

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Mr. Caton:

Enclosed for filing, please find an original and 10 copies of MessagePhone's Comments on the Commission's Further Notice of Proposed Rulemaking in the Matter of Billed-Party Preference For "0+" InterLATA Calls. A copy for each Commissioner is included.

Please acknowledge receipt of this filing by date stamping the extra copy and returning it to MessagePhone in the self-addressed envelope provided.

Sincerely,

Douglas E. Neel
Vice President,
Regulatory Affairs

Enclosures

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	§	
	§	CC Docket No. 92-77
Billed-Party Preference	§	
for 0+ InterLATA Calls	§	

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COMMENTS

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Dated: July 29, 1994

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TO: The Commission

COMMENTS

Pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. Section 1.415 (1991), MessagePhone, Inc. ("MessagePhone")[1] hereby comments on the above-captioned Federal Communications Commission ("Commission") Further Notice of Proposed Rulemaking ("FNPRM"). In this FNPRM, the Commission concludes that billed party preference ("BPP") would serve the public interest, facilitate access to the telephone network and stimulate competition in the operator services market.[2] Accordingly, the Commission proposes establishing rules for BPP routing of interLATA operator calls from public telephones. However, before issuing a mandate, the Commission requests additional comments on the benefits and costs of BPP.

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1 MessagePhone is a Texas-based research and development company. It has developed and patented several caller-activated services, including Automatic Message Delivery Services ("AMDS").

2 FNPRM at para. 2.

MessagePhone applauds the Commission's assessment. Prompt implementation of BPP is achievable. As described herein, MessagePhone has developed technology that is capable of providing BPP for all telephones. This technology provides a cost-effective alternative to the modification of the operator services switch ("OSS").

I. SUMMARY

Adoption of BPP continues to be in the public's interest. The need for BPP has not diminished since the Commission issued its Notice of Proposed Rulemaking ("BPP Notice") two years ago.[3] Premises owners continue to be the focus of operator service competition. Many premises owners still select an operator service provider ("OSP") based on commission payments instead of fair rates and quality service for consumers. Consumers of public telephone services are denied the advantages of equal access and can only reach their preferred carrier by inconveniently dialing extra codes and telephone numbers.

Even worse, many consumers are unable to avoid unreasonable prices because the capability of directly dialing their OSP is illegally blocked. A Commission survey concluded that as many as one in ten public telephones continues to block customers from dialing their preferred service provider.[4] At

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3 Billed Party Preference for 0+ InterLATA Calls, Notice of Proposed Rulemaking, CC Docket No. 92-77, 7 FCC Rcd 3027 (1992).

4 FNPRM at note 5.

least one recent survey suggests that the number of blocking telephones is actually four times higher.

In light of these continuing problems, the Commission has concluded that the benefits of BPP outweigh its costs. The Commission was able to reach this conclusion even though, based on the established record, the cost of implementing BPP would exceed $1 billion. In its comments, MessagePhone demonstrates that the implementation cost actually can be reduced substantially, thus increasing the impetus to mandate BPP. MessagePhone recently has introduced a trunk-side architecture that has the capability of providing numerous new services, including BPP, at approximately one-third of the cost of using the OSS to process BPP calls. This technology includes open-architecture components that are readily available and already proven reliable within public telecommunications networks.

At present, the Commission is considering utilizing the existing OSSs to provide BPP. The traditional OSS architecture was installed approximately ten years ago for processing "0" calls. It was recently upgraded to provide automated operator functionality. The OSS system is a closed architecture with significant limitations. In order to implement BPP, the OSS software must undergo a costly upgrade and the number of OSS systems must be almost doubled. The Commission must be cognizant of the fact that the OSS solution also will create a new LEC bottleneck and identify alternatives, such as MessagePhone's architectures, that promote competition.

MessagePhone's trunk-side architecture furnishes many advantages that are not available when the local exchange carriers' ("LECs") OSSs are used to provide BPP. The architecture has the capability of transmitting and receiving signals in a wide variety of signal types and protocols. This capability gives MessagePhone's architecture the ability to communicate with numerous varieties of data bases. In addition, MessagePhone's architecture can transmit call data signals to OSPs in the formats they currently utilize. This capability will provide a tremendous cost savings for all OSPs, including AT&T.

The trunk-side architecture also has the capability of functioning in tandem with MessagePhone's line-side technology.[5] As local exchange competition increases, many LECs will utilize MessagePhone's line-side technology to provide quality, central office-based services for their pay telephones, as well as offer comparable call processing services to independent pay telephone providers and OSPs. Once installed, these LECs may choose to use the line-side technology to provide BPP for their pay telephone traffic, while using a trunk-side technology to furnish BPP processing for all other "0" telephone calls. The majority of "0" traffic originates from pay telephones.[6] Instead of upgrading all their OSSs, these LECs can utilize a limited installation of MessagePhone's trunk-side architecture to process the non-pay telephone traffic and realize a significant cost savings.

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5 MessagePhone's line-side technology is described in its Comments and Reply Comments filed in response to the Commission's BPP Notice.

6 See MessagePhone Reply Comments at 15; NYNEX Comments at note 31.

MessagePhone invites scrutiny of its line-side and trunk-side architectures. These alternatives to upgrading the existing OSSs deserve serious consideration. Moreover, if mandated, the Commission must give LECs the opportunity to utilize innovative technology, such as MessagePhone's architectures, to provide BPP.

II. THE NEED FOR BPP HAS NOT DISSIPATED

Pursuant to the Telephone Operator Consumer Services Improvement Act of 1990 ("TOCSIA"), the Commission requires unblocking of all pay telephones.[7] Opponents of BPP will insist that TOCSIA has negated the need for BPP. In truth, consumers continue to be thwarted in their efforts to utilize their preferred OSPs. The Commission previously has determined that approximately 10% of telephones have not complied with TOCSIA. Even though the majority of consumers have the opportunity to reach their carrier of choice by dialing access codes, one in ten consumers still are blocked from their preferred service provider.[8]

A more recent study conducted by the Texas Public Utility Commission ("Texas PUC") suggests that, at least in some parts of the U.S., a significantly larger percentage of privately owned pay telephones are blocking access code and 800 number dialing than was determined by the Commission. In its July, 1993

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7 See Policies and Rules Concerning Operator Service Providers, Report and Order, CC Docket No. 90-313, 6 FCC RCD 2744 (1991).

8 FNPRM at note 5.

study, the Texas PUC discovered that 39.8% of the private pay telephones surveyed were blocking customers from reaching their service provider of choice.[9] Because of these violations, there is an ongoing need and expense to enforce compliance to TOCSIA:

> BPP could also reduce the need to police compliance with TOCSIA by eliminating the incentives for premises owners to block access code calls and by diminishing the importance of the TOCSIA call branding and notice requirements.[10]

These studies illustrate that, unless BPP is mandated, enforcement of TOCSIA must become a higher priority and funding for enforcement must be increased significantly in order to assure unblocking.

The FNPRM identifies other problems that were not addressed by TOCSIA and continue to endure:

> We recognize, however, that some calls are still routed to carriers that charge high rates.... We also found that these rates are in many cases driven by higher costs -- and, in particular, the higher commissions these carriers must pay to aggregators under a presubscription system of equal access.[11]

The Commission is correct. The current method of presubscription continues to improperly focus competition on premises owners instead of on telephone users. Consumers who use public telephones still are unable to enjoy equal access. The

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9 A press release from the Texas PUC and the Private Pay Telephone Survey are included as Exhibit A, attached hereto. The telephones surveyed were all located in Austin, the state Capitol. Because of the proximity to the Texas PUC's offices, these telephones are the most likely to be checked by the PUC for compliance to state and federal rules and are the most likely to have complied with TOCSIA. It is highly probable that the percentage of non-compliance is higher in communities outside Austin.

10 Id. at para. 16.

11 FNPRM at note 5.

numerous consumers who do not use access codes face the risk of paying inflated prices.

Consumers deserve to reap the benefits of equal access. Now that multiple technical solutions for implementing BPP exist, the Commission should assure that equal access finally is extended to all telephones -- including public pay telephones.

III. MESSAGEPHONE'S ALTERNATIVE ARCHITECTURE FOR BPP

The Commission must allow LECs to implement BPP utilizing MessagePhone's technologies or other innovative technologies that may be developed as alternatives to an OSS upgrade. The use of innovative technologies, such as MessagePhone's line-side and trunk-side technologies, can reduce the overall cost of implementing BPP while making numerous new services available, most of which are not currently offered from within the public telephone networks.

In its Comments and Reply Comments submitted in response to the Commission's BPP Notice, MessagePhone described in detail its line-side technology.[12] Though highly flexible and capable of providing LECs with approximately two dozen new, basic and enhanced services, the technology is capable only of providing BPP for pay telephones. Because BPP was originally intended to correct abuses originating from public telephones, MessagePhone previously suggested that BPP should be limited to pay telephone calls.[13] The

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12 See MessagePhone Comments at 14-22, Reply Comments at 27-36, 39-45.

13 FNPRM at note 62.

Commission agrees that there is little need for BPP on calls from residential and business telephones. However, because the cost of universal BPP is not significantly greater than pay telephone BPP, the Commission concluded that, if mandated, BPP should be available on all telephones for all 0+ and 0- telephone calls.[14]

Subsequently, MessagePhone announced its development of a trunk-side architecture which is capable of offering BPP on all telephone types for all 0+ and 0- calls.[15] This architecture will provide a cost-effective alternative to the architecture described in the FNPRM and also will enable multiple new basic and enhanced services for use by LECs, interexchange carriers, and OSPs.[16] The technology can be used independently or in conjunction with MessagePhone's line-side technology, providing LECs with several alternative solutions for executing BPP. It can also be fully integrated with existing OSS operator centers and live operator stations.

A. MessagePhone's Trunk-Side Architecture

The major components of MessagePhone's architecture include a network interface, a voice processing platform, and a call processing platform.[17] The architecture has the capability of automating BPP and other operator calls. In

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14 Id. at para. 48.

15 See, MessagePhone ex parte letter from Douglas E. Neel to Donna Searcy June 10, 1993 ("MessagePhone Ex Parte I").

16 See FNPRM at paras. 5-7. See also Joint MCI, GTE, Pacific Bell, SWBT ex parte filing, December 23, 1993 ("BPP Service Description").

17 See Exhibit B, attached hereto.

addition, if the customers need or prefer live operators, the architecture can transmit the call, as well as the call progress and billing data, to the LECs' live operators. The architecture also has the capability to reformat the signals in a manner so the call progress and billing data can be transmitted through the OSS and displayed on an operator's screen. Utilizing this method, live operators can offer immediate assistance without requiring callers to re-enter any data.

The network interface is an open architecture digital switch with an active line monitoring capability. The network interface receives and generates a variety of signal types, including multi-frequency ("MF"), SS7, OSS7, and X.25 signals. Moreover, the network interface detects voice energy and call progress signals, such as "busy" and "ring back." The network interface is utilized to detect conditions for offering services and routing data queries to appropriate data bases. With the addition of the custom application software, open architecture switches, such as those manufactured by Summa Four, can be utilized to execute the network interface functionality.

The voice processing platform is utilized to store and play digitized voice prompts and instructional tones such as a "bong" tone. The voice prompts and tones are used to provide customers with service provider identification, service descriptions, and instructions explaining how services are accessed and used.

The call processing platform controls the execution of the other elements of the architecture. Based on the data received by the call processing platform, appropriate operator and enhanced services are offered to the customers. The call

processing platform can interface with a wide variety of data bases, including Line Information Data Bases ("LIDB"), credit card, debit card and bank card data bases. This platform also performs management and diagnostic functions for the other components. Several computers currently manufactured can serve as a call processing platform, including the Hewlett-Packard 9000 computers and the Sun SPARC II.

The three major elements of MessagePhone's architecture are "off-the-shelf" hardware and software components. The components mentioned herein are recommended by MessagePhone and already have been approved for use within the public telecommunications networks. Moreover, these component elements are being used currently within LEC networks, receive superior performance ratings and are highly respected by the telecommunications industry. MessagePhone's custom designed applications software for BPP and for other operator and enhanced services is based on object-oriented modeling and design. The necessary objects and applications creation environments have already been developed. Accordingly, once the final specifications for BPP are published, the objects can be utilized within the creation environment to tailor the applications to meet the specific requirements. Because the applications software is object-oriented and because the system is an open architecture, the application software can be created in significantly less time than switch generic software for a greatly reduced cost.

The trunk-side architecture can be located in one of two positions in the local public switched network -- either between the originating end office switch and the

equal access tandem switch or between the equal access tandem switch and the various points of presence (POPs) of the interexchange carriers and operator service providers (OSPs). The exact placement of the architecture can vary based on the needs and network configuration of each LATA. For example, currently, all local "0" calls and coin calls are transmitted directly to the OSS subsystem. Many LATAs are configured so that interexchange "0" calls are trunked separately from the "1+" calls to the interexchange carrier. These calls either are trunked directly to the interexchange carrier or to an access tandem capable of processing the necessary supervisory signals.[18] The trunk-side architecture can be installed in front of the access tandem and can be provided with the flexibility to offer many new services. However, some LATAs do not have this capability. Either all the interexchange calls ("0" and "1+") and are transmitted on the same trunks or the system monitors all interexchange traffic and separates and processes only the "0" calls. In the latter situation, the necessity to monitor all traffic would increase the amount of hardware needed and the overall cost of the system. Conversely, in these LATAs, the system can be located between the access tandem and the interexchange carrier's POP. "0" traffic and "1+" traffic would be separated by the access tandem and the architecture would only have access to the "0" calls.

Either location provides the LEC with a flexible, intelligent switching node that is an advancement over the current art. The local public telecommunications networks, as presently constructed, are rigid and lack the flexibility of

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18 See Bellcore, LATA Switching Systems Generic Requirements; IC/INC Interconnection; FSD 20-24-0000, LSSGR, TR-NWT-000690, Issue 1, March 1991.

MessagePhone's architecture to alternate between various signaling formats and protocols and to access and utilize data from numerous data bases.

1. Advantages of MessagePhone's Trunk-Side Architecture

MessagePhone's architecture executes BPP functionality as described in the FNPRM and the BPP Service Description. In addition, MessagePhone's architecture provides significant advantages over the use of the LECs' OSSs -- including the significant cost savings described in Section III infra. The OSSs currently used by LECs were installed approximately ten years ago and are utilized exclusively for handling "0" calls and coin calls from public pay telephones. Approximately five years ago, these switches were upgraded to perform automated operator functionality. These old systems certainly are not "state-of-the-art." They embody a closed-architecture design and do not provide the capability of receiving and transmitting in multiple signal types and protocols. In order to provide BPP, the number of OSSs must be increased significantly and expensive software upgrades must be written and installed.

One notable difference between MessagePhone's trunk-side architecture and the OSS is that the trunk-side architecture does not require SS7 signaling from the end office. In those instances where the end office does not have the capability to split and trunk the interexchange "0" traffic separate from the access code traffic and "00-" traffic, MessagePhone's trunk-side architecture has the capability of monitoring the trunks and separating the "0" traffic for BPP processing. The trunk-side architecture also can function as an SS7 node. It can receive signals in MF

format (and other formats) and re-transmit the signals utilizing SS7 (or other formats, including X.25 and OSS7).

In addition, the trunk-side architecture has the capability of changing the signal protocol by adding fields to the call data. In this manner, MessagePhone's architecture can prepare calls to be processed by the LECs' live operators. For example, telephone calls that are transmitted to long distance carriers are formatted in protocols defined by Bellcore's LATA Switching Systems Generic Requirements ("LSSGR"). These calls currently cannot be processed by the LECs' OSS systems and live operator stations. In those instances when a live operator is required or requested by the consumer, the trunk-side architecture converts the protocol of the call from LSSGR to the signaling protocol as defined by Bellcore's Operator Services Systems Generic Requirements ("OSSGR").

Both the FNPRM and the BPP Service Description recommend that OSPs and non-LEC data bases (e.g., credit and bank card data bases) must be required to receive query transmissions and transmit data in SS7.[19] With MessagePhone's technology, the Commission would not have to require all data bases to become compatible with SS7. Because of its ability to transmit and receive signals in a variety of formats, MessagePhone's trunk-side architecture can query data bases and receive data base data in a variety of signaling formats -- including SS7 and X.25. The OSS will not have this capability. Accordingly, MessagePhone's trunk-side architecture would reduce implementation costs for data base operators,

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19 FNPRM at 6, 50; BPP Service Description at 8.

accelerate the implementation of BPP, and promote competition. Data base operators would be spared the cost of installing expensive SS7 interface equipment and reformatting their data bases. Likewise, despite the opinion of many LECs, these data bases would be available for BPP by the Commission's implementation date.[20] Because all data bases would be available for BPP on the same date, LEC data bases would not receive a competitive advantage.

2. Services Available with MessagePhone's Architecture

As with its line-side technology, MessagePhone's trunk-side architecture can provide numerous services:

- Automatic Message Delivery;
- Automatic Call Back;
- Lease Cost Routing;
- Gateway Services for Information Providers (e.g., for voice mail, facsimile store & forward);
- Customized Call Accounting Records;
- Automatic Switch Language and Format Translation;
- Automated operator services for resale to long distance carriers and operator service providers (including calling card and collect call processing);
- Inmate Call Screening;
- Custom Design Prison Security Control Features; and
- Other Fraud Prevention Applications.

Because of the distributed design of the architecture and the open architecture components, new services and applications can be created easily in very little time, without significant cost. Likewise, MessagePhone's use of object oriented software design increases the ease by which software for new applications can be designed, tested, and implemented. Clearly, MessagePhone's architectures

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20 FNPRM at para. 79; BPP Service Description at note 1.

will allow the LECs to be more responsive to all their customers -- including the interexchange carriers, OSPs, and their telephone customers -- by creating and implementing new services in a timely and cost effective manner.

In contrast, application creation for traditional, embedded network equipment is costly and time consuming:

> Each generic [software release] has to pass extensive and rigorous testing to make sure that adding a new feature won't create problems for those that already exist. The complexity of creating, testing and debugging "backward-compatible" software is what prevents new releases from being implemented more quickly. That, in turn, delays the availability of new services because, until recently, if a feature or function couldn't be implemented in a CO switch software, it couldn't be done at all.[21]

Because of the differences between traditional network equipment and MessagePhone's open architecture equipment, it is actually less expensive to purchase and requires less time to install MessagePhone's entire architecture, with its self contained AABS functionality, than to create a generic software release for the LECs' OSSs.

In addition, because it has the capability to offer many more services and basic functionalities than basic BPP, the trunk-side architecture potentially can promote competition. Many of the services available with this architecture are offered by the LEC to be utilized by interexchange carriers and OSPs. Implementation of these services will enable interexchange carriers to further differentiate themselves from competitors with custom designed services. Also, the

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21 Tom Nolle, "Evolving Toward a Modular Public Network," Distributed Switching: Building Blocks To The Modular Network (A Supplement to Business Communications Review)(May 1994) at p. 1.

LECs offering these services will in time compete against each other to secure interexchange carriers as their customers.

MessagePhone's line-side and trunk-side architectures are excellent examples of how BPP already is spawning technical innovation. It is important that the Commission's mandate allows the LECs and their customers to access the many advantages and services that will become available with these technologies.

3. Implementation of MessagePhone's Architecture

The Commission noted that, in the past, several parties commented that BPP could be implemented, "one year after the necessary software is available ... or within three years of a Commission order mandating it."[22] Other parties suggested that, because manufacturers already have begun working on BPP software, installation could be implemented in approximately two and a half years. For analysis purposes, the Commission suggested that the implementation date for BPP, if mandated, could be June 1997.[23]

These previously published implementation dates assume that BPP calls will be processed by the OSS. Implementation of MessagePhone's architecture will take significantly less time. Application software can be tailored to meet exact specifications in less than nine months. MessagePhone estimates that network-compatibility trials can be completed and first installations can begin approximately one year after the Commission's mandate.

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22 FNPRM at para. 83.

23 Id. at para. 8.

However, MessagePhone recognizes that it does not operate in a vacuum. The LECs' purchasing procedures will likely delay installations. Other issues and unforeseen problems resulting from the LECs' bureaucracies also could retard the installation. Accordingly, MessagePhone recommends that implementation can be completed within two years of a Commission mandate. Postponing BPP beyond two years after the Commission's mandate will be a disservice to American consumers.

B. Additional Implementation Alternatives

In its Comments and Reply Comments in response to the BPP Notice, MessagePhone thoroughly described the advantages of its line-side, pay telephone technology. Because of the large number of revenue producing services enabled by its technology, and because of the obvious maintenance advantages of the technology residing in the central office (instead of in the telephone), MessagePhone believes that some LECs eventually will choose to utilize its line-side technology for services other than BPP. In fact, the need for this technology will increase as local exchange competition finally is implemented. These LECs should not be penalized. The Commission must structure its mandate to allow these LECs use of their line-side technology to provide BPP to pay telephones in their regions.

MessagePhone's line-side and trunk-side architectures are able to operate concurrently. The line-side architecture is used only to process BPP calls originating from pay telephones, thus reducing significantly the amount of operator

traffic that will be processed by the trunk-side architecture. After processing the BPP call, the line-side technology will transmit the call and billing data to the OSP in a format that is ignored by the trunk-side architecture. The use of both architectures will further reduce the cost of BPP.[24] Much of the cost of the line-side technology will be allocated to other services. In addition, instead of having to upgrade all OSSs, the LEC could implement a limited installation of MessagePhone's trunk-side architecture and provide BPP only for the remaining non-pay telephone operator traffic.

In contrast, the solution currently considered by the Regional Bell Operating Companies ("RBOCS") and the Commission requires that all "0" calls must be transmitted to the OSS for BPP processing. In essence, this solution creates a new LEC bottleneck that prohibits the use of alternative technologies to provide BPP. The Commission must avoid a decision that places any such technical limitations on BPP and creates new bottlenecks.

C. MessagePhone's Architecture Must Be Investigated

MessagePhone invites serious investigation concerning the credibility of its architectural solutions. Before the FNPRM was issued, two RBOCs began such investigations. However, the RBOCs suspended their investigations, insisting that

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[24] Without implementing any of the other services, the line-side technology would cost approximately $72 million per RBOC. However, if other services were implemented, the allocated cost could drop as low as $13 million. See MessagePhone Ex Parte I at page 2.

the FCC express specific interest in these alternative architectures before they spent additional time and funds on the projects.

Likewise, one of the RBOCs entertained the possibility of asking Bellcore to meet with MessagePhone in order to analyze its architectures. MessagePhone supports this option. Bellcore certainly is qualified to make the analysis on behalf of all its client customers. Such an analysis would be helpful to the Commission as it considers whether to mandate BPP, and to LECs that must ultimately purchase hardware and software if BPP is mandated. Unfortunately, because of conflict of interests between its various client companies on the issue of BPP, Bellcore has chosen not to be utilized for this task.[25] MessagePhone invites a Bellcore analysis of its architecture in the context of the FNPRM.

IV. MESSAGEPHONE'S TRUNK-SIDE ARCHITECTURE IS COST EFFECTIVE

The following BPP cost estimates are based on traffic data and network information provided by one RBOC ("model RBOC"). Because the data and information are confidential, MessagePhone cannot provide network and traffic assumptions or identify the RBOC. Based on its review of traffic data from other

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25 Bellcore actually conducted an initial review of MessagePhone's trunk-side architecture and expressed no major concerns or objections with the architectural concept. Minor concerns were overcome with a more detailed description of the system. However, the analysis was terminated prematurely before a detailed hardware prototype review could be initiated.

RBOCs, MessagePhone concludes that the cost to implement BPP for other LECs, especially the RBOCs and GTE, will be comparable. However, MessagePhone could more accurately estimate system sizes and costs if other LECs would provide it with more detailed, pertinent call traffic and network data.

A. The Cost of Implementing BPP

The hardware for MessagePhone's trunk-side architecture is configured for two system sizes and is appropriate both for small and large LATAs. The hardware for the larger system costs approximately $750 thousand per system. The hardware cost for the smaller system, with approximately one-half of the capacity of the larger system, is approximately $550 thousand per unit. The operating software and application software for the model RBOC's entire region cost $18 million. The breakdown of the costs are as follows:

Hardware	
9 large systems @ $750	$ 6,750,000
9 small systems @ $550	4,950,000
TOTAL	$ 11,700,000
Software	$ 18,000,000
TOTAL	$ 29,700,000

Assuming seven RBOCs, GTE, and independent LECs, the total non-recurring nationwide cost for hardware and software, using MessagePhone's trunk-side architecture, is estimated at $263.3 million.

At the current traffic levels of the sample RBOC, both large and small systems would operate at less than 50% capacity. The cost of the systems assumes full redundancy, with each component in the system redundant to a factor of at least "N+1."

Unlike the solution utilizing the OSS, MessagePhone's solution will not require end office upgrades to OSS7. This results in a significant cost savings of more than $35 million per RBOC and GTE. Total savings will be approximately $480 million.[26] However, the Commission reported that some LECs realize that an OSS7 upgrade at the end office will be utilized to offer many other services.[27] As described supra, MessagePhone's architecture is compatible both with OSS7, MF and other signal languages. MessagePhone's trunk-side architecture allows LECs to implement BPP without significantly altering their end offices. The LECs then can install SS7 and OSS7 at their end offices as the need for competitive new services increases. Costs can be allocated accordingly.[28]

In addition, MessagePhone's trunk-side architecture only requires one-third the amount of additional trunks because its network interface is used to monitor existing trunks. The architecture utilizes new trunks only to forward calls that require use of the LECs' live operators.[29] Therefore, the use of MessagePhone's

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26 FNPRM at para. 21.

27 Id. at para. 22

28 LEC cost estimates for OSS7 in end offices is about $480 million. MessagePhone believes that this cost can be reduced by at least $100 million and maybe $200 million when included as part of a package with its trunk-side architecture. Currently, MessagePhone is seeking bids from major manufacturers of SS7 equipment and will report its findings to the Commission.

29 See Exhibit A.

architecture will significantly reduce the nationwide cost of trunk terminations and rearrangements from $130 million to approximately $45-50 million (approximately $5 million per RBOC and GTE).[30]

Other costs, such as costs for hiring and training new operators, will remain basically the same. Likewise, MessagePhone's architectures will have no influence on costs for services such as updating LIDB or polling subscribers to determine preferred service providers. With MessagePhone's trunk-side architecture, the non-recurring costs for the model RBOC for implementing BPP are (in millions):

Hardware and software	$ 29.7
End Office OSS7 Upgrade	0.0
Trunk Upgrades	5.0
AABS Upgrade	0.0
LIDB	1.3
TOTAL	$ 36.0

MessagePhone estimates that the non-recurring cost of implementing its architecture nationwide would be approximately $350 million.

B. OSP Implementation Costs

The FNPRN reports that AT&T, MCI, and Sprint would have to spend approximately $100 million in non-recurring costs to modify their networks. The most significant cost would be for modifying equipment to process SS7 protocol data

30 FNPRM at para. 26. The use of MessagePhone's trunk-side architecture will not require a hardware or software alteration of the LECs' OSS or AABS systems.